NSW Transplantation and Immunogenetics Services Laboratory

NSW/ACT RENAL RECIPIENTS

This document summarises the procedures required for:

1. Activation of Renal Recipients on to the NSW/ACT Transplant Waiting List

2. Living Renal Donor Workups

3. Post-Transplant Testings

This document is distributed to transplant hospitals and dialysis units to provide information on the procedures to be followed when organising HLA tissue typing, crossmatching, and the detection and identification of HLA antibodies for pre and post-transplant testings.

1. ACTIVATION OF PATIENTS ONTO THE NSW/ACT KIDNEY TRANSPLANT WAITING LIST (TWL)

1.1 INITIAL AND CONFIRMATORY TESTING

Stages	KR1 (Initial testing)	KR2 (Confirmatory Testing)
Forms	• Completed **NSW Transplantation and Immunogenetics Service Laboratory Request Form (FRM-01676)** which can be downloaded from www.transfusion.com.au • No booking required • NATA accredited ABO result and completed **NSW Activation Request Form (FRM-01405)** which can be downloaded from www.transfusion.com.au are to be sent to ttsoseg@redcrossblood.org.au	
Sample requirements	20 mL ACD, 10 mL clotted blood • Collected pre-dialysis • stored/transported at room temperature • received by the laboratory within 24 hours of collection • 14 days post transfusion • Testing is performed between Monday and Thursday • Testing may not be able to be completed if blood is received after 9:30am on a Friday.	
Tests Performed	HLA typing, Auto T cell crossmatch, HLA antibody detection and identification	HLA typing *Repeat auto T cell crossmatch and HLA antibody detection and identification if required
Patient Status	• Interim when samples are received • Offlist if activation requirements are not met	• Active if ABO and activation forms are received • Offlist if ABO and activation forms are not received

1.2 RE-ENTERING A PATIENT ON THE TRANSPLANT WAITING LIST

Stage	KRR (Re-entry Testing)
What does **RE-ENTRY** means?	• Re-entering the program after previous graft loss • A previously active patient who, at the request of the

	physician, has been "offlist" for more than 12 months • A patient on the waiting list, for whom serum has not been received for 12 months and therefore, has been de-activated from the waiting list
Forms	• Completed **NSW Transplantation and Immunogenetics Service Laboratory Request Form (FRM-01676)** which can be downloaded from www.transfusion.com.au • No booking required • NATA accredited ABO result and completed **NSW Activation Request Form (FRM-01405**) which can be downloaded from www.transfusion.com.au are sent to ttsoseg@redcrossblood.org.au
Samples required	20 mL ACD, 10 mL clotted blood (see sample requirements for KR1/KR2 samples)
Tests Performed	Auto T cell crossmatch, HLA antibody detection and identification
Patient Status	• Active if ABO and activation forms are received • Offlist if ABO and activation forms are not received

1.3. MONTHLY SAMPLES

Active patients	**ALL ACTIVE** patients are required to send a monthly clotted dry tube
Forms	• Completed **NSW Transplantation and Immunogenetics Service Laboratory Request Form (FRM-01676)** which can be downloaded from www.transfusion.com.au • No booking required
Sample required	10 mL clotted blood • The sample needs to be received prior to the 20th of the month to allow time for sample processing • Collected pre-dialysis • stored/transported at room temperature • received by the laboratory within 24 hours of collection (delay could cause haemolysis of sample. It is preferred that samples are spun after collection and collected in a gel bottom tube) • 14 days post transfusion

1.4. PATIENT STATUS

Status	
Active (matched with any potential donors)	•Entry sample testings are complete and Activation form and ABO emailed • Patient is fit for transplant
Interim (Serum WILL NOT BE on the NSW kidney crossmatch trays and WILL NOT be matched with any potential	•Activation form and ABO result not received • They are temporarily unfit for transplant • A request has been made by the patient's doctor or coordinator for any other reason. • The patient has received a blood transfusion within the last

deceased donors)	month
Offlist (Serum WILL NOT BE on the NSW crossmatch trays and WILL NOT be matched with any potential deceased donors)	• The patient is NOT required to send a monthly clotted dry tube • The patient's status will be changed to offlist if they are not to be considered for deceased donor transplantation **Reasons may include the following:** ▪ The patient no longer wants to be listed for a deceased donor transplant ▪ The patient is unfit for transplant and the doctor or transplant coordinator has requested permanent removal from the list ▪ The patient has not fulfilled laboratory requirements by not sending a serum sample in the last 12 months. The patient will be automatically de-activated from the list by the laboratory under these circumstances. However, please note that prior to this event occurring, the doctor/ transplant unit would have been given notice each month as to the status of this patient. ▪ The patient has been transplanted ▪ The patient is now deceased

1.5. NOTIFYING THE LABORATORY OF CHANGES TO PATIENTS RECORDS

The laboratory requires written confirmation from an authorised person for any database changes to patient records.

CHANGES/UPDATES regarding:	
Transplant	• Any live donor transplants need to be recorded on the NSW Live Donor Renal Transplant Form (**FRM-01407**), which can be downloaded from: www.transfusion.com.au and sent to ttsoseg@redcrossblood.org.au
Blood transfusion or any sensitising events	• Immediate notification is required for active patients who received blood transfusion or have undergone any sensitising events (nephrectomy, pregnancy, infection, immunisation, immunosuppression change, etc.) The patient's status needs to be changed to interim by the laboratory to prevent the pre-sensitising event samples being used for crossmatching.
Dialysis Date	• Any changes to a patient's dialysis, is required to be filled in on an activation form and emailed to the laboratory
Deaths	• The laboratory needs to be notified of any patient deaths, so they can be made offlist

2. LIVING RENAL DONOR TRANSPLANTS (LOD)

2.1. INITIAL TESTING (ABO compatibility testing for both patient and donor is performed by the requesting clinical unit.

<table>
<tr><td>Stages</td><td>Stage 1 (Initial)</td><td>Stage 2 (Flow -optional)</td><td>Stage 3 (Confirmatory)</td></tr>
<tr><td rowspan="2">Form</td><td colspan="3">BOOKING IS REQUIRED
For booking:
• Completed NSW Solid Organ Booking Form for Stage 1,2 and 3 testing with the required information, which can be downloaded from www.transfusion.com.au with NATA accredited ABO results and sent to ttbookings@redcrossblood.org.au</td></tr>
<tr><td colspan="3">• Completed NSW Transplantation and Immunogenetics Service Laboratory Request Form (FRM-01676) which can be downloaded from www.transfusion.com.au with samples</td></tr>
<tr><td>Sample requirements</td><td>Recipient: 40 mL ACD
10 mL clotted blood
Donor: 40 mL ACD</td><td>Recipient: 60 mL ACD
10 mL clotted blood
Donor: 60 mL ACD</td><td>Recipient: 40 mL ACD
10 mL clotted blood
Donor: 40 mL ACD</td></tr>
<tr><td></td><td colspan="3">• collected at same time for patient and donor
• collected pre-dialysis
• stored/transported at room temperature
• received by the laboratory within 24 hours of collection.
• 14 days post transfusion or any sensitising events for patients</td></tr>
<tr><td>Tests performed</td><td>Auto and Allo T and B cell CDC crossmatch, HLA typing for recipient/donor, HLA antibody detection for recipient</td><td>Auto and Allo T and B Flow crossmatch, HLA typing for recipient/donor , HLA antibody detection for recipient(dependent on previous testings)</td><td>Auto and Allo T and B cell CDC crossmatch, HLA typing for recipient/donor (dependent on previous testings), HLA antibody detection for recipient</td></tr>
<tr><td>Notes</td><td></td><td>Flow Cytometric Crossmatching can be performed at the request of the clinical unit. Testing is not mandatory, but may be required. Testing will be performed if required clinically or immunologically, based on previous results. Testing should not be booked automatically or prior to completion of stage 1 testing. Please contact the laboratory for testing details.</td><td>It is recommended that this test be performed ONE MONTH prior to transplant</td></tr>
</table>

3. POST TRANSPLANT

TESTING FOR DONOR SPECIFIC ANTIBODIES

Forms	• Completed **NSW Transplantation and Immunogenetics Service Laboratory Request Form (FRM-01676** which can be downloaded from www.transfusion.com.au) • No booking required • If **URGENT TESTINGS** or any further testing for HLA antibodies for the detection of Donor Specific Antibodies are required please contact ttsoseg@redcrossblood.org.au or call **9234 2351**
Sample requirements	10 mL clotted blood • Collected pre-dialysis • stored/transported at room temperature • received by the laboratory within 24 hours of collection • 14 days post transfusion

4. CONTACT DETAILS

NSW Transplantation & Immunogenetics Services

Australian Red Cross Blood Service

17 O'Riordan Street, Alexandria, NSW 2015

(P) 02 9234 2351 (F) 02 9234 2363 (E) ttsoseg@redcrossblood.org.au

www.transfusion.com.au

For any other issue, outside the scope of this document, please contact-

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5. DEFINITIONS

HLA: Human Leucocyte Antigen. The HLA gene complex is located on chromosome 6 in humans. This region is further divided in to Class I, Class II and Class III. HLA Class I is expressed as HLA – A, HLA- B and HLA-C. Class II is expressed as HLA-DR, HLA-DQ, HLA-DP, HLA-DM, and HLA- DO.

HLA Tissue Typing: Tissue Typing is a procedure that determines the type of histocompatibility antigens on a person's cells or tissues. This procedure is typically used prior to transplantation of tissues or organs.

HLA Antibody Screen: A screen performed to determine the presence of an antibody. Depending on which test is used, antibodies may be HLA or non HLA, IgG or IgM.

cPRA: Calculated PRA . A PRA frequency that is calculated using unacceptable antigens, for both Class I and Class II, that have been defined by detection of antibodies using Single Antigen beads.

PRA: Panel Reactive Antibody. A method of antibody screening, where a panel of known HLA antigens is used to determine the amount and specificity of antibody present in a patient's serum.

Auto or Autologous Crossmatch: (PATIENT CELLS + PATIENT SERUM) A test which determines if a recipient has antibodies against oneself. If auto antibodies are present, it must be determined if they are IgM or IgG antibodies.

DTT Crossmatch: DTT is a reagent used to help determine if an autoantibody is an IgG antibody or an IgM antibody. DTT breaks down the disulphide bonds of an IgM antibody resulting in a negative DTT autocrossmatch. If the DTT crossmatch result remains positive, the antibody is most likely IgG.

Allo or Allogeneic Crossmatch: (DONOR CELLS + PATIENT SERUM) A test which determines if a recipient has antibodies against another person's cells.

NOMS (National Organ Matching System): A National database used to store data on all solid organ recipients and donors.